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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,675	11/18/2003	Hiroki Taoka	82478-2300	4812

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EXAMINER	
HAJNIK, DANIEL F	

ART UNIT	PAPER NUMBER
2628	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/715,675	TAOKA ET AL.	
	Examiner	Art Unit	
	Daniel F. Hajnik	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Display Apparatus, Method, and Program to Smooth out Color Values using Sub-Pixel Dissimilarities Levels.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11 and 12 are rejected under 35 U.S.C. 101. The claimed invention is directed to non-statutory subject matter. That is, the claims are directed to a program, which is a data structure, per se. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional

interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betrisey et al. (US Patent 6738526, herein referred to as "Betrisey") in view of Hill et al. (US Patent 6577291, herein referred to as "Hill").

As per claim 1, Betrisey teaches the claimed "three display device which includes rows of pixels, each pixel composed of three sub-pixels that align in a lengthwise direction" in figure 6.

Betrisey teaches the claimed "front image storage unit" by teaching of "*foreground ... colors*" (col 26, lines 63-64).

Betrisey teaches the claimed "superimposing unit" by teaching of "*color blending*" (figure 23, piece 2304) where the foreground colors (front image stored) and background colors (currently image displayed) are blended (superimposed) together.

Betrisey teaches the claimed "displaying unit" in figure 5, pieces 547 and 548.

Betrisey does not explicitly teach the claimed "calculation unit operable to calculate a dissimilarity level". Hill suggests the claimed limitation by teaching of checking the difference of luminance intensity between two adjacent sub-pixel components (col 21, lines 45-55 and figure 9c, step 976). The reference teaches that the sub-component sub-pixels are adjacent in figure 7B. One particular advantage to using only front image color comparisons (calculating dissimilarities) can be to reduce color on characters, which are too bright and unpleasant to look at (col 18, line 62 – col 19, line 1).

Betrisey does not explicitly teach the claimed "filtering unit to smooth out color values ... by assigning weights, which are determined in accordance with the dissimilarity level".

Hill teaches the claimed limitation by teaching of:

> *adjusting the luminous intensity of pixel sub-components of distracting pixels may involve (1) subtracting some luminous intensity from bright pixel sub-components and/or (2) adding some luminous intensity, e.g., the amount that was subtracted in (1), to an adjacent, different colored pixel sub-component, e.g., a neighboring pixel sub-component of the same pixel.*
> (col 19, lines 4-10)

The reference teaches of assigning weights by teaching of weighting the sub-pixel colors values in figure 9C, steps 978 and 980 where $[(R_{CP}-G_{CP}) \times RF] / 10$ is the weight influencing amount (the change of color). The quotation described above (col 19, lines 4-10) performs filtering because the reference is adjusting the luminous intensities to smooth out the distracting pixels.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Betrisey and Hill, because Betrisey and Hill are analogous art. Further, Hill teaches one advantage of the combination by teaching of:

> *Performing steps (1) and/or (2) in accordance with the color compensation techniques of the present invention reduces color artifacts and thus color distractions.*

(col 19, lines 10-13)

where Betrisey can benefit from the added functionality.

As per claim 2, Betrisey does not teach the claimed limitations. Hill suggests the claimed limitations by teaching of a loop where all sub-pixels in each row can be tested (see loop in figure 9C. One advantage to particularly using the claimed maximum value would be to quickly focus on smoothing the largest intensity dissimilarities.

As per claim 3, Betrisey does not explicitly teach the claimed limitations. Hill teaches the claimed limitations in figure 9C, step 982 where the filtered sub-pixels (second-target-range sub-pixels) (labeled G_{CP} and R_{CP}) can be adjusted or filtered by assigned new color values (G_N and R_N). These filtered sub-pixels correspond in number and position because the first-target-range sub-pixels have the same corresponding variables (labeled G_{CP} and R_{CP}) in steps 978 and 980 before the sub-pixels were filtered. Thus, these variables reference the same sub-pixel on the display. One advantage to using the claimed feature is that this correspondence is number and location makes intuitive sense and makes for straightforward filter implementation.

As per claim 4, Betrisey does not teach the claimed limitations. Hill teaches the claimed limitations in figure 9C, step 976. One advantage to using such a feature is taught by Hill in col 19, lines 53-57.

As per claim 5, the reasons and rationale for the rejection of claim 1 is incorporated herein.

Betrisey teaches the claimed "Transparency values" by teaching of "*alpha values*" (col 26, line 45).

As per claims 6-8, these claims are similar in scope to claims 2-4, respectively, and are rejected under the same rationale.

As per claims 9 and 11, these claims are similar in scope to claim 1, and are rejected under the same rationale.

As per claims 10 and 12, these claims are similar in scope to claim 5, and are rejected under the same rationale.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel F. Hajnik whose telephone number is (571) 272-7642. The examiner can normally be reached on Mon-Fri (8:30A-5:00P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka J. Chauhan can be reached on (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/14/06

DFH

ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER